



NOS OBSERVATION *and* MODELING *in* SUPPORT *of* COMMERCE *and* TRANSPORTATION

NOAA's National Ocean Service

ROUND TABLES

As commercial vessels grow larger and allowable margins of error for port traffic decrease, real-time and near real-time environmental information to support safe navigation becomes more important to safe navigation. Port authorities and vessel operators rely on NOAA's National Ocean Service (NOS) to provide this information, as well as accurate forecasts of future expected conditions, in a timely manner.

National Water Level Program

The National Water Level Program produces and disseminates water-level products. It is a challenge to ensure continuous, accurate measurements from fully automated sites, which typically receive only one annual maintenance trip per year. A planned major upgrade to NOS' National Water Level Observation Network will enable every station to provide quality-controlled, real-time data; only those stations associated with a Physical Oceanographic Real-Time System (PORTS,) and those in the Great Lakes do this now. This enhancement will provide a baseline level of real-time service to U.S. seaports and represents a major step toward fully funded federal real-time hydrographic systems.

Physical Oceanographic Real-Time System (PORTS™)

PORTS provides real-time, quality-controlled oceanographic and atmospheric information to support safe and efficient navigation in U.S. ports and waterways. These real-time systems may include measurements of water levels, currents, winds, air temperature and pressure, bridge clearance, and salinity. In the future, wave height and visibility will also be provided in near real time. Currently, NOS has established 10 PORTS, including New York/New Jersey, Los Angeles/Long Beach, and the Chesapeake Bay. At least 10 more ports have expressed interest in establishing PORTS systems, but are having difficulty obtaining funding.

Modeling

The NOS Coast Survey Development Laboratory (CSDL) develops hydrodynamic models in support of safe navigation for U.S. waterways. These models provide forecasts of various parameters, such as water levels, currents, salinity, and temperature. At present funding levels, CSDL can develop approximately two new models a year. The NOS Center for Operational Oceanographic Products and Services (CO-OPS) performs quality control on these models and makes them available to the public. CO-OPS supports a total of three models at existing funding levels. A joint CSDL/CO-OPS funding increase has been requested for FY 2004 to support the development and delivery of up to five new models a year. These models are essential parts of the infrastructure to support Marine Transportation System navigational needs.

NOS has also devised a solution to integrate geospatial data sets. The vertical datum (VDatum) transformation tool is used to translate geospatial data between different vertical reference systems. By accurately transforming elevation data from one vertical datum to another, geospatial data becomes integrated and seamless. In the near future, VDatum will advance the capabilities of electronic nautical charting systems and electronic chart display (e.g., real-time display of actual water depths during a transit).



N O S

W o r k i n g f o r A m e r i c a ' s C o a s t s

**National
Current
Observation
Program** NOS' National Current Observation Program—the tidal prediction tables—is very out of date. More than 70 percent of the approximately 2,700 predictions in the tables are either based on data more than 25 years old or on data of insufficient duration. NOS has withdrawn tidal current charts from several locations due to reported inaccuracies and has received many reports of inaccuracies in other table locations. A small program funding increase in FY 2002 allows about 10 locations to be observed and updated each year. NOS' long-term plan is to update approximately 350 locations that support the top 40 U.S. ports and harbors once every 10 years, and the other coastal locations once every 25 years—a requirement of 130 total observations per year.